

**TRIP REPORT FOR THE
ST. VINCENT'S HOME
SOIL SAMPLING EVENT
PHILADELPHIA, PENNSYLVANIA**

Prepared for

U.S. Environmental Protection Agency
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Prepared by

Approved by

A large black rectangular redaction box covering the signatures of the Project Manager and START Program Manager.

Project Manager

START Program Manager

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1.0 INTRODUCTION

Under Eastern Area Superfund Technical Assessment and Response Team (START) Contract No. EP-S3-05-02, Technical Direction Document (TDD) No. E23-018-08-03-006, U.S. Environmental Protection Agency (EPA) Region 3 tasked Tetra Tech EM Inc. (Tetra Tech), to conduct a site inspection (SI) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in support of site assessment activities conducted at the Girard Smelting site located at the terminus of Milnor Street at Bleigh Street in Philadelphia, Pennsylvania, 19136. Activities conducted as part of this SI include completing a windshield assessment of the area surrounding Milnor and Bleigh Streets to identify potential soil sampling locations. The data collected during the SI will be used to determine the need for additional assessment activities at the site or in the surrounding area.

This trip report provides site background information in Section 2.0, describes investigation activities in Section 3.0 and summarizes conclusions and recommendations in Section 4.0. All references cited in this report are listed in Section 5.0. All figures are included in Appendix A and a copy of the logbook documentation is provided in Appendix B.

2.0 SITE BACKGROUND

Former lead smelter sites nationwide were identified in an April 2001 article published in the American Journal of Public Health by Eckel, and others (Eckel study) (Reference [Ref.] 1). The majority of these lead smelters operated prior to 1964 and closed before the current environmental regulations were instituted. As part of the Eckel study, soil samples were collected from several of the identified former lead smelter properties. Results from the analysis of these soil samples indicated that concentrations of lead exceeded EPA's recommended screening level for lead in residential soils. The results of the Eckel study indicate that the air disposition of lead into soils from the former smelter operations may present an ongoing public health concern due to exposure of residential populations, especially children, located in the vicinity of these former lead smelters, to soils containing elevated concentrations of lead (Refs. 1, 2, and 3). One of the sites identified in the Eckel study was the Girard Smelting site located at the terminus of Milnor Street at Bleigh Street in Philadelphia, Pennsylvania, 19136. Each former

smelter property was given a number in Eckel's study. The Eckel study number for this site is 55 (Ref. 1).

The geographic coordinates of the former Girard Smelting facility are 40.024800° north latitude and 75.028100° west longitude on the Frankford, Pennsylvania Quadrangle, 7.5 minute series, United States Geological Survey topographic map (see Appendix A, Figure 1). The site is identified in EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database as the Girard Smelting Company, CERCLIS ID Number PAN000306579 (Ref. 4).

Tetra Tech completed a windshield reconnaissance of the site and surrounding area on October 13, 2005. The area surrounding the intersection of Milnor and Bleigh was observed to be predominately industrial. A large, old brick building was located on the property located at the intersection of Milnor and Bleigh Streets. The building was occupied by Capitol Auto Auction. Surrounding the building was an asphalt-paved parking lot. The pavement was broken in spots, but no soil areas were observed on the property. Tetra Tech did not observe any areas warranting soil sampling on the property or on any properties bordering the former lead smelter at this time. On February 7, 2008, Tetra Tech returned to the area to determine if site conditions had changed since October 13, 2005. The site is still occupied by Capitol Auto Auction and was still covered in asphalt with no visible soil areas present. Tetra Tech proceeded to conduct a windshield assessment of the surrounding area to determine if any potential targets, specifically residences or areas possibly frequently used by children, were located in the immediate vicinity of the former smelter. Tetra Tech identified one property, the St. Vincent's Home, located at 7201 Milnor Street. The St. Vincent's Home is located approximately 1,000 feet southwest of the former lead smelter. The St. Vincent's Home provides a group home for women and children and also operates a day care program (Refs. 5 and 6). Based on the proximity to the former lead smelter and identification of children using the property, Tetra Tech recommended a soil sampling event be conducted at the St. Vincent's Home property.

3.0 INVESTIGATION ACTIVITIES

On June 19, 2008, Tetra Tech collected in situ and ex situ soil samples from the St. Vincent's Home property. The samples were analyzed for lead concentration using a Niton model XLt portable x-ray fluorescence (XRF) analyzer, calibrated to analyze bulk soil samples using a cadmium₁₀₉ radioactive source. XRF analysis was performed in accordance with EPA SW-846, Method 6020 (Ref. 7).

Prior to initiating field sampling activities, Tetra Tech met with the St. Vincent's representative, Diane Sheeron, to determine areas frequently used by children. Ms. Sheeron showed Tetra Tech three playground areas. The remainder of the 16.41-acre site not covered by buildings is currently unused open space covered by grass (see Appendix A, Figure 2). Tetra Tech collected in situ soil samples from 54 randomly selected locations including the three playground areas and surrounding open spaces (see Appendix B, Logbook Documentation). The in situ lead concentrations recorded ranged from not detected (ND) to 325.6 parts per million (ppm). The lead concentration detected in the majority of samples ranged from ND to 80 ppm. To confirm the results of the in situ readings, Tetra Tech collected a composite sample from each of the playground areas for ex situ XRF analysis. The samples were collected from 0 to 12 inches below the ground surface. Each sample was placed in an aluminum tin and homogenized prior to placement into a plastic Ziploc bag. The samples were brought back to the Tetra Tech Boothwyn office for XRF sample preparation and analysis. The ex situ sample preparation steps included:

- Placing a 50-gram aliquot of homogenized soil in a labeled baking cup
- Placing baking cup in oven for 2 hours at 250o F
- Screening the dried, 50-gram sample through a #10 mesh sieve (60 micron)
- Placing sieved sample in labeled XRF analysis cup
- Placing clean paper over sample in cup, place cotton ball over paper, and snap on the sample cup cover

Each XRF sample cup was placed into the portable XRF for analysis. The sample collected from playground area 1 had a lead concentration of 28.3 ppm. A lead concentration of 84.6 ppm was

recorded for the sample collected from playground area 2, and a lead concentration of 69.2 ppm was recorded for playground area 3.

4.0 CONCLUSIONS AND RECOMMENDATIONS

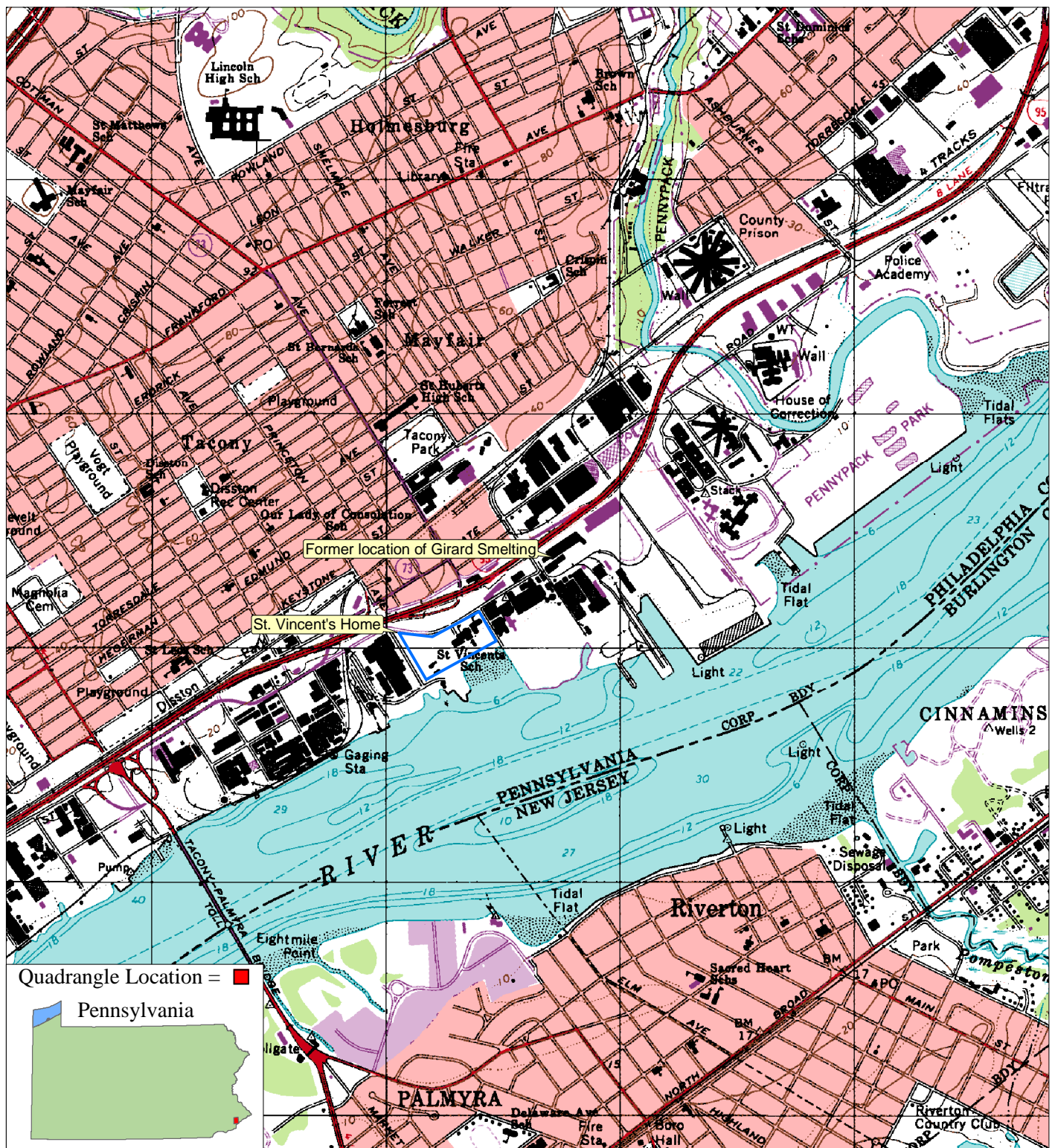
There is no EPA risk-based concentration established for lead. The action level typically used for residential soils when no site-specific action level is established is 400 ppm. None of the lead concentrations detected from any of the soil samples collected from the St. Vincent's Home property were above 400 ppm; therefore, no further assessment of the property is warranted at this time.

5.0 REFERENCES

1. Eckel, W.P., Rabinowitz, M.B., Foster, G.D. American Journal of Public Health. "Discovering Unrecognized Lead-Smelting Sites by Historical Methods". April 2001.
2. Pennsylvania Department of Health. Suspected Former Lead Smelter Sites: A Potential Risk Factor for Childhood Lead Poisoning. August 2004.
3. U.S. Environmental Protection Agency (EPA). Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9355.4-12. July 14, 1994.
4. U.S. EPA. Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) database. On-Line Address: <http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm>
5. St. Vincent's Home. "St. Vincent's Home is in Transition" Accessed On-Line on June 26, 2008. On-Line Address: stvincenthome.org.
6. Tetra Tech. Screening Site Investigation. February 1, 2007.
7. EPA. EPA SW-846, Method 6020 "Field Portable X-Ray Fluorescence Spectrometry For The Determination Of Elemental Concentrations In Soil And Sediment." from "Test Methods for Evaluating Solid Waste," September 1986.

APPENDIX A


FIGURES





Legend

 Playground area

0 100 200 300
 Feet
 Scale in Feet

St. Vincent's Home
 7201 Milnor Street
 Philadelphia, Pennsylvania



Figure 2
 Aerial Photograph

Source: Modified from DigitalGlobe aerial photography, October 1, 2006.



APPENDIX B
LOGBOOK DOCUMENTATION



Name _____

Address _____

Phone _____

Project _____

Clear Vinyl Protective Slipcovers (item No. 30) are available for this style of notebook. Helps protect your notebook from wear & tear. Contact your dealer or the J. L. Darling Corporation.

CONTENTS

PAGE

REFERENCE

DATE

6/19/08 - Sampling St Vincent
(Girard & me etc)

[Redacted]

1040 - Arrive St Vincent
Met w/ Digne Sheron -
She walked us around
to show us play areas.

Approved us sampling anywhere

XRF readings in playground
area next to picnic tables
(covered)

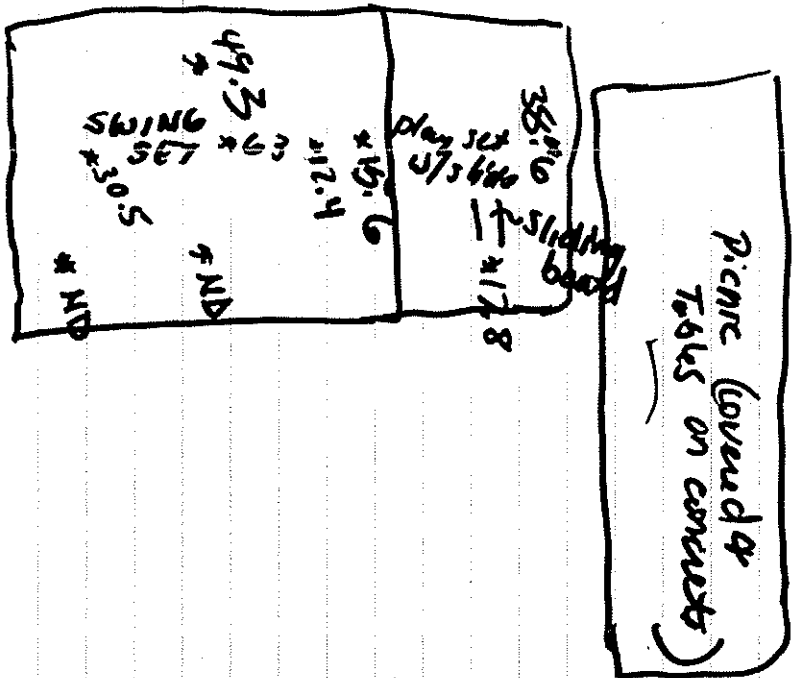
Area covered in soil (no
mulch)

See figure next page

[Redacted]

6/17/08

* All readings in ppm



Milnor Street

Picnic area

SS-01 Sample collected of playground area 1 - (Swing set) Composite sample @ 6" - 4 locations each corner of play area. Soil consisted of mid. brown loam. Collected @ 1045

57.0

75.8

open field

41.4

43.5

50.9

78.7

6/17/08



* 46.8

* 245.8

* 125.2

* 105.6

* 62.8
(open field
(soccer field))

* 115.5

* 49.8

* 104.9

Milnor Street

Metal Bank

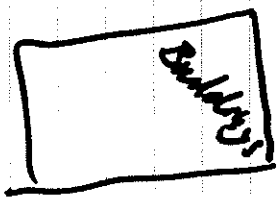
* 121

* 96.8

* 145.9

* 163.3

* 112.5



Field behind
bumpers



* 92.8

* 68.3

* 58.2

* 21.2

* 126.2

Reliance River

Milnor St.

* 44.4

* 41.9

* 49.5

* 31.1

* 45.1

* 41.5

* 303.10

subway
set

62.9

* 71.9

* 48.6

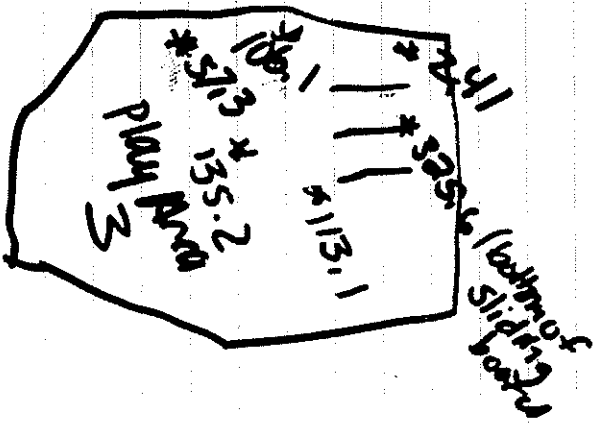
asphalt

Miller Street

SS-Q2 collected as 5 point
composite in play area.
collected by mm @ 1210

Miller

Buildings



Play Area 2

SS-03 collected by Noy
as 5 point composites
around swing set in
Play area 2
collected 1225

milman street

*79.4

*77.5

*56.4

*73.1

School Building

off site @ 1320.

6/19/08

Prepared 3 soil samples. Placed in
oven @ 350° for 3 hours. Sieved
(after grinding into mortar & pestle)
then placed into xrf cup for
reading.

SS-01 (play area 1) - 28.3 ppm lead

SS-02 (play area 2) - 84.6 ppm

SS-03 (play area 3) - 69.2 ppm

6/19/08